

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated December 30, 2009 has been received and its contents carefully reviewed.

In the Office Action, claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of the prior art (hereinafter "AAPA") in view of Japanese Patent JP 05-107533 (hereinafter "'533 patent").

With this response, claim 11 has been amended, and claims 12-16 have been canceled without prejudice or disclaimer. No new matter has been added.

Accordingly, claim 11 is currently pending, of which claims 1-10 are withdrawn from consideration in this application.

In the Office Action, claims 11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 has been amended to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Accordingly, Applicants submit that claim 11 fully complies with the written description requirement of 35 U.S.C. 112, second paragraph, and respectfully requests that this rejection be withdrawn.

The rejection of claims 11-16 under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of the '533 patent is respectfully traversed and reconsideration is requested.

Independent claim 11 is allowable over AAPA in view of the '533 patent in that claim 11 recites a combination of elements including, for example, "loading first and second dummy aligning plates at predetermined positions onto a table with certain space therebetween, wherein the certain space is a known distance between the first and second dummy aligning plates of a known size and wherein the first and second dummy aligning

plates are formed of glass and have an area of about 100 x 100 mm; providing an alignment controller including a first display unit indicating a first reference position and a first image of the first alignment pattern, a second display unit indicating a second reference position and a second image of the second alignment pattern, a first controller for moving the table, and a second controller for moving a second image camera; moving the table to a certain position, wherein the certain position is a specific known position of the table; detecting the first image of the first alignment pattern by a first image camera and displaying the first image of the first alignment pattern through the first display unit of the alignment controller; moving the table in forward/backward and left/right directions through the first controller of the alignment controller in order to make the first alignment pattern and the first reference position coincide with each other; moving the table to a certain different position; moving the table in forward/backward and left/right directions so that the second dummy aligning plate is positioned at a lower side of the second image camera; detecting the second image of the second alignment pattern through the second image camera and display the second image of the second alignment pattern through the second display unit of the alignment controller; and moving the second image camera in forward/backward and left/right directions through the second controller of the alignment controller in order to make the second alignment pattern and the second reference position coincide with each other.”

None of the cited references, singly or in combination, teaches or suggestions at least the aforementioned features of the claimed invention.

According to the prior art, the mother substrate for fabricating the liquid crystal display panel is practically the same as the dummy substrate 411 except that an operator is used for fabricating an actual liquid crystal display panel. Thus, as the area of the dummy substrate 411 increases, it becomes more and more difficult to load and unload the dummy substrate 411, which can cause a delay in fabrication. Such a delay will slow the fabrication line and thus decrease productivity. In addition, loading and unloading a large-scale dummy substrate 411 manually increases the chances of damage, which increases fabrication cost. Moreover, because additional space is required for the operator to perform the manual loading and unloading of the dummy substrate 411, space use efficiency of a clean room is degraded and a facility expense is increased.

That is, the dummy substrate is a large-sized glass having a same size as the mother substrate thereof. Accordingly, the handling thereof is very difficult and sagging cannot be

prevented from happening on both the dummy substrate and the mother substrate as their size increases (at present, greater than 2 m in horizontal and vertical length respectively, and less than 1 mm in thickness). When the sagging happens on the dummy substrate, an error is inevitably results when using a conventional technology of capturing and aligning a sealant coating position. However, according to the present invention, the dummy substrate has about 10 mm in horizontal and vertical length respectively, and thus basically no errors occurs because of the sagging of the dummy substrate. Such an effect may appear more prominently as the size increases.

An object of the present invention is to provide an apparatus for aligning a dispenser and aligning method thereof that is capable of quickly and easily aligning a dispenser to form a seal pattern using the dispenser.

According to the present invention, even though the area of the substrate for fabricating a large-scale liquid crystal display panel increases, dispensers may be precisely aligned by loading the first and second dummy aligning plates with an area smaller by several times to several tens of times than the substrate. Accordingly, thanks to the easy loading and unloading of the first and second dummy aligning plates with the small area, the aligning process quickly proceeds with improved productivity. Also, because damage to the first and second dummy aligning plates is prevented, fabrication costs may be reduced. In addition, loading and unloading of the first and second dummy aligning plates having such a small size improves the space use efficiency of the clean room.

Moreover, according to the prior art, as shown in FIG. 4D, the table 410 is then moved to a different predetermined position, and the sealant is supplied through the syringe 401A on the dummy substrate 411 to form a vertically crossing second alignment pattern 413. Thereafter, as shown in FIG. 4E, the table 410 is merely moved to a certain position.

The Office admits that AAPA does not teach the presence of a second dummy substrate. See Office Action at page 4.

Applicant respectfully asserts that '533 patent does not cure the deficiencies of AAPA. The Office asserts that it would have been obvious to provide two dummy substrates, one for each of the two substrates that will be joined, and to provide these with alignment marks according to the known prior art process disclosed by Applicant. One skilled in the art

would have been motivated to do so by the desire and expectation of providing alignment marks on both dummy substrates simultaneously.

However, '533 patent teaches away from and does not suggest "loading first and second dummy aligning plates at predetermined positions onto a table with certain space therebetween, wherein the certain space is a known distance between the first and second dummy aligning plates of a known size and wherein the first and second dummy aligning plates are formed of glass and have an area of about 100 x 100 mm; providing an alignment controller including a first display unit indicating a first reference position and a first image of the first alignment pattern, a second display unit indicating a second reference position and a second image of the second alignment pattern, a first controller for moving the table, and a second controller for moving a second image camera; moving the table to a certain position, wherein the certain position is a specific known position of the table; detecting the first image of the first alignment pattern by a first image camera and displaying the first image of the first alignment pattern through the first display unit of the alignment controller; moving the table in forward/backward and left/right directions through the first controller of the alignment controller in order to make the first alignment pattern and the first reference position coincide with each other; moving the table to a certain different position; moving the table in forward/backward and left/right directions so that the second dummy aligning plate is positioned at a lower side of the second image camera; detecting the second image of the second alignment pattern through the second image camera and display the second image of the second alignment pattern through the second display unit of the alignment controller; and moving the second image camera in forward/backward and left/right directions through the second controller of the alignment controller in order to make the second alignment pattern and the second reference position coincide with each other" as recited in independent claim 11.

Accordingly, Applicant respectfully requests that the Office withdraw the 35 U.S.C. 103(a) rejection of independent claim 11.

Applicants believe the application is in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to

discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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Respectfully submitted,

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